

**FACT SHEET FOR NPDES PERMIT
NO. WA-002099-1**

**CITY OF SUNNYSIDE
PUBLICLY-OWNED TREATMENT WORKS**

SUMMARY

The City of Sunnyside is seeking reissuance of its National Pollutant Discharge Elimination System (NPDES) permit for its Publicly-Owned Treatment Works (POTW). The City's POTW is classified by the Department of Ecology (Department) as a major municipal discharger. The POTW consists of almost 55 miles of sewers, 15 lift stations and a wastewater treatment plant. Wastewater receives secondary-level treatment in a trickling filter/solids contact process and chlorine disinfection. Treated effluent is discharged to the Roza-Sunnyside Board of Joint Control Drain 33.4, an irrigation drainage ditch, formerly known as DID (Drainage Improvement District) #3. Joint Drain 33.4 empties into the Sulphur Creek Wasteway, which, in turn, is tributary to the Yakima River.

Beginning in the mid-1980's, the Department has expressed its concerns about overloading and design capacity of the City's treatment plant. In response, the City began the process of moving the dischargers over to the Port of Sunnyside's Industrial Wastewater Treatment Facility. Since the previous permit was issued in 1997, the City has completed the disconnection of the last remaining industrial dischargers from its POTW.

At present, the City is under a Schedule of Compliance to address and correct issues related to achieving compliance with water quality-based effluent limits, primarily chlorine and ammonia. The City chose to combine two reports required by the previous permit, the *Plan to Maintain Adequate Capacity* and the *Disinfection Report*, into a more comprehensive planning document, a *Wastewater Facilities Plan*. The City submitted a draft *Facilities Plan* in June 2000 and expects to submit a revised draft plan in April 2002. The final *Facilities Plan* is expected to be submitted to the Department in October 15, 2002.

The City anticipates implementing a major upgrade of the treatment plant during the upcoming permit cycle. Therefore, the focus of this permit is to require submittal of a final, approvable *Facilities Plan* and completion of construction, with the goal of achieving compliance with all relevant water quality standards.

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the State of Washington on the basis of Chapter 90.48 RCW which defines the Department of Ecology's authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the State include procedures for issuing permits (Chapter 173-220 WAC), technical criteria for discharges from municipal wastewater treatment facilities (Chapter 173-221 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in Appendix C--Response to Comments.

GENERAL INFORMATION	
Applicant	City of Sunnyside
Facility Name and Address	City of Sunnyside Wastewater Treatment Plant 1338 S. 4 th Street Sunnyside, WA 98944
Treatment Processes	Primary clarification, trickling filter, secondary clarification, anaerobic digestion, and chlorination.
Discharge Location	Joint Drain 33.4, tributary to Sulphur Creek. Latitude: 46° 18' 50" N Longitude: 120° 00' 58" W
Water Body ID Number	Joint Drain 33.4: No assigned number Sulphur Creek: WA-37-1030

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

The City of Sunnyside (City) is located in eastern Yakima County, approximately 30 miles southeast of the City of Yakima and 45 miles west of the Tri-Cities (Richland, Kennewick, and Pasco).

History

The City's Publicly-Owned Treatment Plant (POTW) was originally constructed in 1948 as an intermediate level trickling filter treatment plant. In 1958, the POTW was upgraded to include an additional trickling filter with anaerobic sludge digestion. Another significant upgrade occurred in 1988 when an aerated solids contact process was installed downstream of the trickling filters to provide additional secondary treatment for the City's wastewater. In 1990, a 900,000-gallon sludge storage lagoon was added; while in 1993, the POTW received a new sludge heating building, boiler, plant lift station, chlorination building with an emergency chlorine scrubber, and a new gas mixing system on anaerobic digester #1.

Collection System Status

The collection system is composed of approximately 55 miles of asbestos-concrete pipe and 15 publicly-owned lift stations. Inside the boundaries of the City, there are three separate sewer

systems (City sanitary, City storm, and Port of Sunnyside industrial) plus several irrigation systems. The system is in a good condition for its age (installed in the early 1940s), although there recently have been emerging instances of collapsing crowns, which have the potential for the collection system to transmit groundwater, contaminated by petroleum products, to the POTW.

Treatment Processes

The wastewater treatment process utilized by the City consists of a headworks with grit removal, screening and pre-aeration; primary clarification; trickling filters; diffused aeration activated sludge; secondary clarification; gas-heated anaerobic digestion; land application of sludge; chlorine disinfection; an outfall line and process control buildings. The POTW provides secondary treatment for the City's wastewater. However, some of the treatment processes at the POTW lack system redundancy, which can result in bypasses and other problems when any part of the system is out-of-service. This permit requires the submittal of a Redundancy Evaluation Report, as part of the Facility Plan, to determine the feasibility of adding redundancy (i.e., a second primary clarifier) wherever it is determined to be lacking at the facility. The City submitted a *Redundancy Evaluation Report*, dated February 1999, as part of the draft *Facility Plan* in 2000, but the plan has not yet been approved.

Discharge Outfall

Treated and disinfected effluent is discharged from the facility via a 36-inch diameter open-ended pipe, with a trash rack, into Joint Drain 33.4 which subsequently discharges into Sulphur Creek. Sulphur Creek, itself, discharges into the Yakima River approximately 6 miles downstream from the confluence with Joint Drain 33.4.

Residual Solids

The treatment facilities remove solids at the headworks (grit and screenings), and at the primary and secondary clarifiers, in addition to incidental solids (rags, scum, and other debris) removed as part of the routine maintenance of the equipment. Grit, rags, scum and screenings are drained and disposed of as solid waste at the local landfill. Solids removed from the primary and secondary clarifier are treated anaerobically and land applied under a permit from the Yakima Health District. The City is currently in compliance with the requirements of the State's Biosolids General Permit.

PERMIT STATUS

The previous permit for this facility was issued on March 31, 1997. The previous permit placed effluent limitations on 5-day Biochemical Oxygen Demand (BOD₅), Total Suspended Solids (TSS), pH, Fecal Coliform Bacteria, Total Residual Chlorine (TRC) and Total Ammonia. The permit also required minimum concentrations of Dissolved Oxygen be present in the discharge.

An application for permit renewal was received by the Department on August 29, 2001 and accepted by the Department on October 3, 2001.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

A compliance inspection without sampling was conducted on October 3, 2001.

During most of the previous permit cycle, the Permittee has remained in compliance, based on Discharge Monitoring Reports (DMRs) submitted to the Department and inspections conducted by the Department. The previous permit contained interim and final effluent limits. Interim limits were established to allow the City an opportunity to complete a facility upgrade. The permit provided for significantly more stringent water quality-based limits for Fecal Coliform Bacteria, TRC, Ammonia and DO that became effective January 2, 2001. The Department established these more stringent limits on the assumption the City would have completed the upgrade. However, the City did not request an extension of the interim limits until after issuance of a Notice of Violation on April 10, 2001.

A series of Administrative Orders and a Notice of Violation were issued to the City during the previous permit cycle. The Orders were issued to revise submittal dates for various reports required by the 1997 permit. The Notice of Violation cited exceedances of final effluent limitations. The administrative actions are briefly described, in chronological order, below.

Administrative Order No. DE 98WQ-C177

In a letter dated December 2, 1998, the City requested extensions of submittal dates for the following reports required by the previous permit: Engineering Report of Design Criteria and System Redundancy, Plan to Maintain Adequate Capacity, and Disinfection Report. The Order granted the City's request.

EXPIRATION DATE: JULY 31, 2007

Administrative Order No. DE 98WQ-C177A-991

In letters dated October 20, 1999 and November 2, 1999, the City requested a second extension of time to submit a Plan to Maintain Adequate Capacity and a Disinfection Report. The Department also granted the City's request to combine the 2 reports into a *Wastewater Facility Plan*.

Administrative Order No. DE 98WQ-C177A-02

In this second amendment to the original Order, issued April 7, 2000, the City was again granted an extension to submit the *Facility Plan*.

Notice of Violation No. DE 01WQCR-2667

On April 10, 2001, the Department issued the City a Notice of Violation (NOV), in response to a series of Ammonia and TRC effluent limit violations. The NOV cited 4 exceedances of the final Ammonia limit (2 mg/L) 41 exceedances of the Chlorine limit (0.02 mg/L) that occurred January and February 2001. The NOV required the City to submit a report detailing the steps the City planned to take to achieve compliance with the final effluent limitations.

In response to the NOV, the City provided a schedule detailing submittal of the *Facility Plan* and completion of construction, and requested an extension of the interim limits. The basis of the City's request was that the solutions to address the Ammonia and Chlorine exceedances would be detailed in a comprehensive manner in the upcoming *Facility Plan*.

Administrative Order No. DE 01WQCR-2831

This Order, issued on May 7, 2001, granted the City's request to reinstate the interim Ammonia and Chlorine effluent limits through the remainder of the previous permit cycle. In addition, the Order established a schedule for submittal of the draft and final *Facility Plan*, and a construction schedule.

Administrative Order No. DE 01WQCR-2890

In a letter dated May 14, 2001, the City requested reinstatement of the interim DO and Fecal Coliform Bacteria effluent limits, which it had inadvertently failed to request in its previous permit. This Order, which granted the City's request, was issued on May 24, 2001.

Administrative Order No. DE 01WQCR-2831A-01

The amendment, issued on October 26, 2001, granted the City's request for an extension of the submittal dates on which the next draft *Facility Plan* and the final version of the document were due. The City requested the extension to evaluate utilizing water reuse options as part of the treatment plant upgrade.

WASTEWATER CHARACTERIZATION

Conventional Pollutants

Influent

The concentration of pollutants in the treatment plant's influent was reported in discharge monitoring reports (DMRs) submitted to the Department by the City. Influent hydraulic and organic monthly loadings for the period July 1, 2000 to June 30, 2001 are presented in Table 1 along with the relevant design criteria.

Table 1: Influent Wastewater Characterization

Parameter	Average Monthly Loading	Maximum Monthly Design Loading	% of Average Monthly Design Criteria
Flow, in MGD ^a	1.16	3.0	39
BOD ₅ , in lbs/day	3,118	6,000	52
TSS, in lbs/day	4,430	6,000	74

a-MGD means millions of gallons per day.

As the data in the table illustrate, the treatment plant is operating well within its design parameters. However, the design criteria is inappropriate, because the criteria assumed construction of a third trickling filter. The third filter was not built due to lack of funding. Further discussion on this issue may be found in the Design Criteria section of this fact sheet, on page 17.

Effluent

BOD, TSS and pH

The concentrations of BOD₅, TSS and pH in the treatment plant's discharge were reported in discharge monitoring reports (DMRs) submitted to the Department by the City. BOD₅, TSS and pH are characterized together because the permit limits for these parameters remained unchanged throughout the previous permit cycle. (Parameters with interim and final limits are addressed in the following section.) Effluent concentrations for the period July 1, 2000 to June 30, 2001 are

presented in Table 2 along with the average monthly effluent limits established in the previous permit.

Table 2: BOD, TSS and pH Wastewater Characterization

Parameter	Annual Average Concentration	Range of Monthly Averages	Average Monthly Permit Limit(s)	# of Exceedances
BOD ₅ , in mg/L	19.0	14.1-37.6	30	2
TSS, in mg/L	12.6	7.0-21.9	30	0
pH, in Standard Units	Min=7.18 Max=7.82 ^a		Between 6.0 and 9.0	0

a-Annual minimum and maximum.

The City had an excellent record of compliance for BOD₅, TSS and pH. The BOD exceedances were caused by a cannery discharge of high sulfur bleach that disrupted treatment plant's biological processes for nearly a month. The cannery discharges were moved to the Port of Sunnyside wastewater treatment facility, and since the move, the City has had no instances of noncompliance with BOD limits.

Fecal Coliform Bacteria

The previous permit addressed Fecal Coliform Bacteria with interim and final effluent limits. Effluent concentrations for the period July 1, 2000 to June 30, 2001 are presented in Table 2 along with the average monthly and average weekly effluent limits established in the previous permit. The final Fecal Coliform limits became effective January 2, 2001.

Table 3: Fecal Coliform Bacteria Wastewater Characterization

Parameter	Annual Average Concentration	Range of Geometric Means	Interim Average Monthly/ Weekly Limits	Final Average Monthly/ Weekly Limits	Total Number of Exceedances
Fecal Coliform Bacteria, in #colonies/ 100 mL	82.75	35-151	200/400	100/200	6

The City was in compliance with the interim Fecal Coliform limits, but encountered problems complying with the final effluent limits. The City exceeded the average weekly limit 5 times and the remaining exceedance was of the average monthly limit.

DO

The previous permit addressed DO with interim and final effluent limits. Effluent concentrations for the period July 1, 2000 to June 30, 2001 are presented in Table 2 along with the minimum daily effluent limits established in the previous permit. The final DO limits became effective January 2, 2001.

Table 4: Dissolved Oxygen Wastewater Characterization

Parameter	Annual Average Concentration	Range of Reported Daily Minimums	Interim Daily Minimum Limit	Final Daily Minimum Limit	Total Number of Exceedances
DO, in mg/L	4.0	2.6-5.6	2.0	4.0	57

All exceedances of the minimum DO limit occurred after the more stringent final limits went into effect in January 2001.

Ammonia and Chlorine

Concentrations of Ammonia and Chlorine present in the discharge were characterized in the current NPDES application as follows:

Table 5: Toxic Pollutant Wastewater Characterization

Parameter	Maximum Daily Concentration	Average Daily Concentration	Interim Daily Maximum Limit	Final Daily Maximum Limit	Total Number of Samples
Ammonia, In mg/L	29.9	15.2	20.0	2.0	40
Chlorine, In mg/L	0.31	0.11	0.50	0.02	424

The City was in compliance with the interim effluent limits from permit issuance until January 1, 2001. However, as was stated previously in this fact sheet, the City exceeded the final Ammonia effluent limits 4 times, and the final Chlorine limits 41 times, during January and February 2001. The City has consistently indicated that it does not have the financial resources to achieve compliance with the stringent water quality-based final limits until outside funding is secured. Then the necessary upgrades can be undertaken.

Priority Pollutants

Metals

Treatment plant influent and effluent were sampled concurrently, on February 5 and August 15, 2001, for metals. Analytical results were reported in the permit application and are presented in Table 6. Undetected parameters are indicated with a 'less than symbol' (<) followed by the method detection level (MDL).

Table 6: Characterization of Influent and Effluent Metals

Parameter	February Sampling Event		August Sampling Event	
	Influent	Effluent	Influent	Effluent
Antimony, in µg/L	<30	<30	<30	<30
Arsenic, in µg/L	<5	<5	<5	<5
Beryllium, in µg/L	<5	<5	<5	<5
Cadmium, in µg/L	<5	<5	<5	<5
Chromium, in µg/L	<5	<5	<5	<5
Copper, in µg/L	32	5	41	7
Cyanide, Total in µg/L	6	<5	<5	<5
Lead, in µg/L	<5	<5	<25	<25
Mercury, in µg/L	0.2	<0.2	<0.2	<0.2
Nickel, in µg/L	<10	<10	<10	<10
Selenium, in µg/L	<100	<100	<100	<100
Silver, in µg/L	<5	<5	9	<5
Thallium, in µg/L	<100	<100	<100	<100
Zinc, in µg/L	120	27	420	280
Phenols, Total in µg/L	26	<5	?	?

The pollutants detected, and their concentrations, are typical of a large municipal treatment plant.

Organics

Treatment plant influent and effluent were sampled concurrently 3 times during 2001 for organic pollutants. Samples dates were February 5, July 9 and August 15, 2001. Results for the July 9th sampling event were incomplete, so the City took the August 15th influent and effluent samples. Only results for those pollutants which were detected in at least one sample are presented in this fact sheet. Analytical results were reported in the permit application and are presented in Table 7. All results are presented as µg/L.

Table 7: Characterization of Influent and Effluent Organic Pollutants

Parameter	February Sampling Event		July Sampling Event		August Sampling Event	
	Influent	Effluent	Influent	Effluent	Influent	Effluent
Pesticides						
No pesticides were detected.						
Base/Neutral/Acid Compounds						
Benzyl alcohol	16	<5	Samples not analyzed for these fractions.		25	<5
Bis (2-ethylhexyl) phthalate	19	5			37	6
1,4-Dichlorobenzene	5	<5			7	<5
Diethyl phthalate	5	<5			12	<5
4-Methylphenol	69	<5			71	<5
Volatile Compounds						
Acetone	Samples not analyzed for these fractions.		a	a	Samples not analyzed for these fractions.	
Chloroform			34	<30		
Methylene chloride			a	a		
a-Acetone and methylene chloride were present in the samples and method blanks. The lab report states that the presence of these analytes may be due to laboratory contamination since they are common laboratory solvents.						

Comparatively few priority pollutants are present in the City's influent and effluent. Concentrations of priority pollutants that are present in the City's wastewater are relatively low for a major municipal treatment plant, probably due to the disconnection of all industrial dischargers from the collection system. Industrial users formerly connected to the City's collection system are now discharging to the Port of Sunnyside Industrial Wastewater Treatment Facility.

SEPA COMPLIANCE

SEPA will be conducted after the City decides the final configuration of the upgraded treatment plant and the disposal method (discharge to surface water, land application or water reuse) has been determined.

PERMIT LIMITATIONS

Federal and State regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations for municipal discharges are set by regulation (40 CFR 133, and Chapters 173-220 and 173-221 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992.) The most stringent of these types of limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the application. The effluent constituents in the application were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the State of Washington were determined and included in this permit. Ecology does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation.

Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances the permit does not authorize discharge of the non-reported pollutants. Effluent discharge conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department of Ecology. The Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

This permit continues the interim technology-based and performance-based effluent limits established in the previous permit, in tandem with a Schedule of Compliance (Special Condition S9.), to allow the City the opportunity to achieve compliance with all applicable water quality standards. The City anticipates compliance will be achieved through the upcoming treatment plant upgrade. As part of the required *Facility Plan*, this permit requires the City to conduct a comprehensive evaluation of the upgraded treatment plant discharge to comply with the State's Surface Water Quality Standards.

DESIGN CRITERIA

In accordance with WAC 173-220-150(1)(g), flows or waste loadings shall not exceed approved design criteria.

The most recent Department-approved design criteria for this treatment facility are taken from the January 1986 *Wastewater Treatment Plant Expansion Predesign Report*, prepared by Brown and Caldwell Consulting Engineers, and are as follows:

Table 8: Design Criteria for the City of Sunnyside WWTP

Parameter	Design Quantity
Monthly average flow (max. month)	3.0 MGD
Peak daily flow	8.1 MGD
BOD ₅ influent loading	6,000 lbs/day
TSS influent loading	6,000 lbs/day
Design population equivalent	35,000 persons

However, the use of the above design criteria is considered by the Department to be inappropriate because the POTW was not actually upgraded in accordance with that report. The POTW, as finally upgraded in 1988, did not include one of the major process components recommended by Brown and Caldwell Consulting Engineers to reach the above level of design criteria. The 1986 *Predesign Report* specifically recommended construction of a third trickling filter, which was to be filled with plastic media and operated “in parallel” with the two original rock-filled trickling filters. This third trickling filter was supposed to have received “56% of the plant organic loading”. As this third trickling filter was never constructed, the design criteria contained in the previous permit are considered inappropriate. In support of this revised loading, the predesign report also stated that the two original rock-filled trickling filters, comprising 50,540 ft³, are designed to treat a maximum of 50 lbs BOD/1000 ft³/day. This indicates a design loading of 3,370 lbs BOD₅ which may actually be closer to the correct value.

The design population equivalent for the POTW is also considered inappropriate. A design population of 16,850 would be more appropriate for a loading capacity of 3,370 lbs/day and is appropriate for the facility as built. The actual design criterion for TSS of 6,000 lbs/day would appear correct as the upgraded treatment processes were constructed to handle TSS, according to the engineering report.

The 1999 *Capacity Analysis and Facility Reliability Report* contains a reevaluation of the existing treatment plant design criteria. They are as follows:

Table 9: Unapproved Design Criteria for the City of Sunnyside WWTP

Parameter	Design Quantity
Monthly average flow (max. month)	1.8 MGD
Peak daily flow	8.1 MGD
BOD ₅ influent loading (max. month)	4,000 lbs/day
TSS influent loading (max. month)	4,000 lbs/day

FACILITY PLAN

Special Condition S8. establishes a timetable for the City to submit an approvable *Facility Plan*, specifies key components to be included in the plan, and requires that plans and specs be submitted in a timely manner. Although WAC 173-240-060(2), (3) and (4) detail the requirements of a *Facility Plan*, the permit highlights specific concerns of the Department that the Permittee is advised to address carefully. Several of the requirements are for reports that were required in previous permits, such as the *Capacity Analysis and Facility Reliability Report* and the *Disinfection Report*. The *Capacity Analysis* was submitted to the Department, and is included as an appendix to the draft *Facility Plan*, but was never approved. Special attention is drawn to the water quality evaluation because of: 1) the small flows in the ditch relative to the flow from the treatment plant, 2) the seasonal nature of the receiving water flows (irrigation vs. non-irrigation season), 3) the water quality-impaired status of the receiving water, and, 4) the lack of a computer model available to the Department to simulate such a discharge. An *Inflow and Infiltration Evaluation* is required because, although most of the collection system dates from the 1940's, an analysis of the system's integrity has not been conducted in recent years. It is anticipated that much of the work developed in the draft *Facility Plan* can be incorporated into the final *Facility Plan*.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Municipal wastewater treatment plants are a category of discharger for which technology-based effluent limits have been promulgated by Federal and State regulations. These effluent limitations are given in the Code of Federal Regulations (CFR) 40 CFR Part 133 (Federal) and in Chapter 173-221 WAC (State). These regulations are performance standards that constitute all known available and reasonable methods of prevention, control, and treatment for municipal wastewater.

The interim technology-based limits for pH, fecal coliform, BOD₅, and TSS are based on Chapter 173-221 WAC and are as follows:

Table 10: Technology-based Limits

Parameter	Limit
pH:	shall be within the range of 6 to 9 standard units.
Fecal Coliform Bacteria	Monthly Geometric Mean = 200 organisms/100 mL Weekly Geometric Mean = 400 organisms/100 mL
BOD ₅ (concentration)	Average Monthly Limit is the most stringent of the following: - 30 mg/L - may not exceed fifteen percent (15%) of the average influent concentration Average Weekly Limit = 45 mg/L
TSS (concentration)	Average Monthly Limit is the most stringent of the following: - 30 mg/L - may not exceed fifteen percent (15%) of the average influent concentration Average Weekly Limit = 45 mg/L
TRC	Daily Maximum= 0.5 mg/L

The technology-based monthly average limitation for chlorine is derived from standard operating practices. The Water Pollution Control Federation's *Chlorination of Wastewater* (1976) states that a properly designed and maintained wastewater treatment plant can achieve adequate disinfection if a 0.5 mg/L chlorine residual is maintained after fifteen minutes of contact time. See also Metcalf and Eddy, *Wastewater Engineering, Treatment, Disposal and Reuse*, Third Edition, 1991. A treatment plant that provides adequate chlorination contact time can meet the 0.5 mg/L chlorine limit on a monthly average basis. The previous permit established an interim daily maximum chlorine limit of 0.5 mg/L. This permit includes the same limit.

The following technology-based mass limits were established in the previous permit and are as follows:

BOD₅ and TSS monthly mass loadings effluent limits = 540 lbs/day.

The BOD₅ and TSS weekly average effluent limits are calculated as 1.5 X monthly loading = 811 lbs/day.

PERFORMANCE-BASED EFFLUENT LIMITATION

Based on minimal operational data, the previous permit established an interim daily maximum ammonia limit of 20 mg/L. During the winter months, when nitrification/denitrification is inhibited by cold temperatures, the treatment plant is not able to comply with this limit. The treatment plant is not designed to achieve nitrification/denitrification and the operators have no operational measures they can implement to reduce effluent ammonia levels.

WAC 173-201A-160(4)(b) states that, when a facility is under a schedule of compliance, interim limits may be established based on the best professional judgment. It is the best professional judgment of the Department that, in consideration of the treatment plant's inability to adequately treat ammonia in the discharge, interim limits are appropriate until the treatment plant upgrade is completed.

The interim daily maximum limit established in this permit is based on the 99th percentile of ammonia effluent data submitted by the Permittee in its DMRs. Effluent data were compiled in a standard Excel spreadsheet for the 48 sampling events that occurred during 2000 and 2001. The percentile function of the spreadsheet was utilized to calculate the interim limit of 29.7 mg/L. The 99th percentile was chosen because of the lack of process control measures available to the operators to reduce effluent ammonia.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a State regulation designed to protect the beneficial uses of the surface waters of the State. Water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin-wide total maximum daily loading study (TMDL).

This permit does not contain any water quality-based limits due to the lack of computer software to model sidebank discharges and the absence of ambient data characterizing the receiving water. Table 5-1 of the unapproved draft *Facility Plan* contains some data characterizing the receiving water that was collected during the 1999 irrigation season (mid-April to mid-November); however, the City will need a more complete data set in order to assure that the discharge from the upgraded treatment plant fully complies with the water quality standards. Compliance with the water quality standards must be evaluated on a *year-round* basis, not only during irrigation season, if the Permittee intends to discharge year-round. A characterization of the receiving water during non-irrigation season must be done because the low flow condition of the receiving water occurs during the non-irrigation season, when dilution is minimal.

Additional concerns the Department has about the existing data include the fact that samples were often taken during the morning hours, when water temperatures were relatively low and dissolved oxygen levels were relatively high. Monitoring should be *representative*, to reflect conditions when the waterway is at its lowest *assimilative capacity*. The monitoring program should also measure background ammonia levels, in addition to temperature and pH, which are necessary data to conduct a reasonable potential analysis for ammonia. These data will be helpful in establishing seasonal effluent limits for ammonia, in the event they are considered desirable or necessary. More information regarding the Department's expectations of what should be in the final *Facility Plan* can be found earlier in this fact sheet, under Facility Plan.

Numerical Criteria for the Protection of Aquatic Life

"Numerical" water quality criteria are numerical values set forth in the State of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in a receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

Numerical Criteria for the Protection of Human Health

The State was issued 91 numeric water quality criteria for the protection of human health by the U.S. EPA (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish consumption and drinking water from surface waters.

Narrative Criteria

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the State of Washington.

Antidegradation

The State of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

Critical Conditions

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

Mixing Zones

The Water Quality Standards allow the Department of Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100. The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention and control (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

The present sidebank outfall is believed to produce minimal mixing, due to the heat in the discharge, and the Department lacks a computer model to simulate such a discharge. Therefore, this permit does not authorize an effluent mixing zone. The Department will reconsider this determination after the City conducts a Mixing Zone analysis, reconstructs the outfall, or relocates it to a larger receiving water body.

Description of the Receiving Water

The facility discharges to Joint Drain 33.4, which is owned by the Roza-Sunnyside Board of Joint Control. The drain is not specifically classified by the Department. Therefore, in accordance with WAC 173-201A-120(6), the drain is designated by default as a freshwater Class A receiving water in the vicinity of the outfall.

The characteristic beneficial uses of the receiving water include the following: water supply (domestic, industrial, agricultural); stock watering; fish migration; fish, crustacean and shellfish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation. Water quality of this class shall meet or exceed the requirements for all or substantially all uses.

The segment of Sulphur Creek Wasteway (Class B), to which Joint Drain 33.4 discharges, is on the Department's 303(d) list for exceedances of DDT, DDE, DDD, Dieldrin, Alpha-Endosulfan and temperature surface water quality standards.

Flow data supplied by the Sunnyside Valley Irrigation District, for the period from April 1999 through March 2001, indicates water is present in the drain during the non-irrigation season as well as the irrigation season. The irrigation season runs from approximately mid-April to mid-October annually. During this period, flows during the irrigation season ranged from 9.76 cubic feet per second (cfs) to 42.62 cfs. Off-season flows range from 9.3 cfs to 19.8 cfs. In the event the City decides to continue discharging into the drain after the treatment plant upgrade is implemented, the low off-season flows must be taken into account when compliance with the State's Surface Water Quality Standards is evaluated in the *Facility Plan*.

Surface Water Quality Criteria

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for this discharge are summarized below:

Table 11: Water Quality Criteria for Class A Waters

Parameter	Criteria
Fecal Coliforms	100 organisms/100 mL maximum geometric mean
Dissolved Oxygen	8 mg/L minimum
Temperature	18 degrees Celsius maximum or incremental increases above background
pH	6.5 to 8.5 standard units
Turbidity	less than 5 NTUs above background
Toxics	No toxics in toxic amounts (see Appendix C for numeric criteria for toxics of concern for this discharge)

Consideration of Surface Water Quality-Based Limits for Numeric Criteria

Pollutants in an effluent may affect the aquatic environment near the point of discharge (near field) or at a considerable distance from the point of discharge (far field). Toxic pollutants, for example, are near-field pollutants--their adverse effects diminish rapidly with mixing in the receiving water. Conversely, a pollutant such as BOD is a far-field pollutant whose adverse effect occurs away from the discharge even after dilution has occurred. Thus, the method of calculating water quality-based effluent limits varies with the point at which the pollutant has its maximum effect.

The derivation of water quality-based limits also takes into account the variability of the pollutant concentrations in both the effluent and the receiving water.

Toxic Pollutants--Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted from meeting the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits.

The following toxics were determined to be present in the discharge: chlorine, ammonia, copper, zinc, and bis-2-ethylhexyl phthalate. A reasonable potential analysis was not conducted on these parameters because the facility is presently under a Schedule of Compliance. Furthermore, background data for these pollutants in the receiving water are not available. The Department anticipates that data collected during this permit cycle, required by Special Condition S8.

(*Facility Plan*), will allow a reasonable potential analysis to be conducted during development of the next permit, if not before.

Whole Effluent Toxicity

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing. Some WET tests measure acute toxicity and other WET tests measure chronic toxicity.

In accordance with WAC 173-205-040, the Permittee's effluent has been determined to have the potential to contain toxic chemicals. This permit would ordinarily contain requirements for whole effluent toxicity testing as authorized by RCW 90.48.520 and 40 CFR 122.44 and in accordance with procedures in Chapter 173-205 WAC. However, the Permittee is improving pollution control in order to meet other regulatory requirements. The results of an effluent characterization for toxicity would not be accurate until after the improvements have been completed. WAC 173-205-030(4) allows the Department to delay effluent characterization for WET for existing facilities that are under a compliance schedule in a permit to implement technology-based controls or to achieve compliance with surface water quality-based effluent limits. The Department anticipates that the City will complete its facility upgrade during this upcoming permit cycle and WET Testing will be required during the next permit cycle.

Human Health

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the State by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

The Department has determined that the applicant's discharge is undergoing technology-based upgrades based on a Department order or permit, and thus should be regulated for human health based criteria only after upgrades are completed. The discharge will be re-evaluated for impacts to human health at the next permit reissuance.

Sediment Quality

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

The Department has determined through a review of the discharger characteristics and effluent characteristics that this discharge has no reasonable potential to violate the Sediment Management Standards.

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

This Permittee has no discharge to ground; therefore, no limitations are required based on potential impacts to ground water.

COMPARISON OF EFFLUENT LIMITS WITH THE PREVIOUS PERMIT

BOD₅, TSS, Fecal Coliform Bacteria, pH

Parameter	Previous Permit Limitations				Proposed Permit Limitations			
	Interim		Final		Interim		Final	
	AM	AW	AM	AW	AM	AW	AM	AW
BOD ₅ , in mg/L; lbs/day	30; 540	45; 811	30; 540	45; 811	30; 540	45; 811	TBD	TBD
TSS, in mg/L; lbs/day	30; 540	45; 811	30; 540	45; 811	30; 540	45; 811	TBD	TBD
FCB, # colonies/100 mL	200	400	100	200	200	400	TBD	TBD
pH, in Standard Units	Between 6.0 and 9.0 at all times.				Between 6.0 and 9.0 at all times.			

AM-Average Monthly AW-Average Weekly FCB-Fecal Coliform Bacteria TBD-To Be Determined

Interim limits in the previous and proposed permits are identical for these parameters to allow the City time to complete its planned treatment plant upgrade. Final limits in the proposed

EXPIRATION DATE: JULY 31, 2007

permit will be established based on the water quality evaluation to be conducted in the *Facility Plan*.

TRC and Ammonia

Parameter	Previous Permit Limits		Proposed Permit Limits	
	Interim	Final	Interim	Final
	Maximum Daily	Maximum Daily	Maximum Daily	Maximum Daily
TRC, in mg/L	0.5	0.02	0.5	TBD
Total Ammonia, in mg/L	20.0	2.0	20.0	TBD

NA-Mass loading effluent limits were not established in the previous permit.

The basis of the interim ammonia concentration limits in the previous permit are not fully detailed. The fact sheet simply states: . . . interim limits . . . are based on existing demonstrated performance and/or technology. No further documentation is provided.

Final limits for TRC and ammonia in the proposed permit will be established based on the water quality evaluation and AKART analysis to be conducted in the *Facility Plan*. When developing the analysis for ammonia, the Permittee may want to explore the possibility of establishing seasonal limits to take advantage of this pollutant's lower toxicity during cold weather.

DO

Parameter	Previous Permit Limits		Proposed Permit Limits	
	Interim	Final	Interim	Final
	Maximum Daily	Maximum Daily	Maximum Daily	Maximum Daily
DO, in mg/L	2.0	4.0	2.0	TBD

The interim concentration limits remain unchanged from the previous permit. Final limits in the proposed permit will be established based on the water quality evaluation and AKART analysis to be conducted in the *Facility Plan*.

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

The monitoring schedule is detailed in this permit under Special Condition S2. Specified monitoring frequencies take into account the quantity and variability of discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring. The required monitoring frequency is consistent with agency guidance given in the current version of Ecology's *Permit Writer's Manual* (July 1994) for trickling filter plants with a monthly design flow of more than 2 MGD.

NPDES permits issued to major municipal facilities normally require monitoring of the receiving water for 10 specific metals. In addition, such permits normally require characterization of influent and effluent for the same metals for two purposes: to quantify the removal of metals in the treatment processes, and to quantify metals concentrations present in the effluent. Effluent metals concentrations and receiving water data are used by the Department to conduct reasonable potential analyses for the Permittee's discharge to exceed the State Surface Water Quality Standards in the development of the next permit. However, in recognition of the impending treatment plant upgrade, this permit does not require these studies. The City is advised that these studies, in addition to whole effluent toxicity (WET) testing will be required after the treatment plant upgrade has been completed, probably in the next permit.

LAB ACCREDITATION

With the exception of certain parameters the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories*. The laboratory at this facility is accredited for: BOD₅, TSS, TRC, DO, NH₃, pH, Fecal Coliform Bacteria, Alkalinity and Hardness.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The requirements of Special Condition S3. are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210).

PREVENTION OF FACILITY OVERLOADING

Overloading of the treatment plant is a violation of the terms and conditions of the permit. To prevent this from occurring, RCW 90.48.110 and WAC 173-220-150 require the Permittee to take the actions detailed in Special Condition S.4. to plan expansions or modifications before existing capacity is reached and to report and correct conditions that could result in new or increased discharges of pollutants. Special Condition S.4. restricts the amount of flow.

Special Condition S8. of this permit establishes a timetable for the submittal and approval of a final *Facility Plan*. Approval of the *Facility Plan* would normally fulfill the planning requirement of this permit that addresses maintaining adequate treatment capacity. However, the timetable to implement the upgrade is subject to the uncertainties of the City securing adequate funding. Therefore, the purpose of Special Condition S4.B in *this* permit is that, in the event influent loadings exceed 85% of design loadings before the City has secured funding, the City is required to formally notify the Department of measures that will be taken to protect the integrity of the treatment processes.

OPERATION AND MAINTENANCE (O&M)

This permit contains Special Condition S5. as authorized under RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

RESIDUAL SOLIDS HANDLING

To prevent water quality problems the Permittee is required in Special Condition S7. to store and handle all residual solids (grit, screenings, scum, sludge, and other solid waste) in accordance with the requirements of RCW 90.48.080 and State Water Quality Standards.

The final use and disposal of sewage sludge from this facility is regulated by U.S. EPA under 40 CFR 503 and Chapter 173-308 WAC. The disposal of other solid waste is under the jurisdiction of the Yakima County Health District.

FEDERAL AND STATE PRETREATMENT PROGRAM REQUIREMENTS

Under the terms of the addendum to the "Memorandum of Understanding between Washington Department of Ecology and the United States Environmental Protection Agency, Region 10" (1986), the Department of Ecology (Department) has been delegated authority to administer the Pretreatment Program (i.e. act as the Approval Authority for oversight of delegated Publicly Owned Treatment Works (POTWs)). Under this delegation of authority, the Department has exercised the option of issuing wastewater discharge permits for significant industrial users discharging to POTWs which have not been delegated authority to issue wastewater discharge permits.

There are a number of functions required by the Pretreatment Program which the Department is delegating to such POTWs because they are in a better position to implement the requirements (e.g. tracking the number and general nature of industrial dischargers to the sewerage system). The requirements for a Pretreatment Program are contained in Title 40, part 403 of the Code of Federal Regulations. Under the requirements of the Pretreatment Program (40 CFR 403.8(f)(1)(iii)), the Department is required to approve, condition, or deny new discharges or a significant increase in the discharge for existing significant industrial users (SIUs) (40 CFR 403.8 (f)(1)(i)).

The Department is responsible for issuing State Waste Discharge Permits to SIUs and other industrial users of the Permittee's sewer system. Industrial dischargers must obtain these permits from the Department prior to the Permittee accepting the discharge (WAC 173-216-110(5)) (Industries discharging wastewater that is similar in character to domestic wastewater are not required to obtain a permit. Such dischargers should contact the Department to determine if a permit is required.). Industrial dischargers need to apply for a State Waste Discharge Permit sixty days prior to commencing discharge. The conditions contained in the permits will include any applicable conditions for categorical discharges, loading limitations included in contracts with the POTW, and other conditions necessary to assure compliance with State water quality standards and biosolids standards.

The Department requires this POTW to fulfill some of the functions required for the Pretreatment Program in the NPDES permit (e.g. tracking the number and general nature of industrial dischargers to the sewage system). The POTW's NPDES permit will require that all SIUs currently discharging to the POTW be identified and notified of the requirement to apply for a wastewater discharge permit from the Department. None of the obligations imposed on the POTW relieve an industrial or commercial discharger of its primary responsibility for obtaining a wastewater discharge permit (if required), including submittal of engineering reports prior to construction or modification of facilities (40 CFR 403.12(j) and WAC 173-216-070 and WAC 173-240-110, et seq.).

WASTEWATER PERMIT REQUIRED

Chapter 90.48 RCW and WAC 173-216-040 require SIUs to obtain a permit prior to discharge of industrial waste to the Permittee's sewerage system. This provision prohibits the POTW from accepting industrial wastewater from any such dischargers without authorization from the Department.

REQUIREMENTS FOR ROUTINE IDENTIFICATION AND REPORTING OF INDUSTRIAL USERS

The NPDES permit requires non-delegated POTWs to "take continuous, routine measures to identify all existing, new, and proposed SIUs and potential significant industrial users (PSIUs)

discharging to the Permittee's sewerage system". Examples of such routine measures include regular review of business tax licenses for existing businesses and review of water billing records and existing connection authorization records. System maintenance personnel can also be diligent during performance of their jobs in identifying and reporting as-yet unidentified industrial dischargers. Local newspapers, telephone directories, and word-of-mouth can also be important sources of information regarding new or existing discharges. The POTW is required to notify an industrial discharger, in writing, of their responsibilities regarding application for a State waste discharge permit and to send a copy of the written notification to the Department. The Department will then take steps to solicit a State waste discharge permit application.

DUTY TO ENFORCE DISCHARGE PROHIBITIONS

This provision prohibits the POTW from authorizing or permitting an industrial discharger to discharge certain types of waste into the sanitary sewer. The first portion of the provision prohibits acceptance of pollutants which cause pass through or interference. The definitions of pass through and interference are in Appendix B of the fact sheet.

The second portion of this provision prohibits the POTW from accepting certain specific types of wastes, namely those which are explosive, flammable, excessively acidic, basic, otherwise corrosive, or obstructive to the system. In addition wastes with excessive BOD, petroleum based oils, or which result in toxic gases are prohibited to be discharged. The regulatory basis for these prohibitions is 40 CFR Part 403, with the exception of the pH provisions which are based on WAC 173-216-060.

The third portion of this provision prohibits certain types of discharges unless the POTW receives prior authorization from the Department. The discharges include cooling water in significant volumes, stormwater and other direct inflow sources, and wastewaters significantly affecting system hydraulic loading, which do not require treatment.

SUPPORT BY THE DEPARTMENT FOR DEVELOPING PARTIAL PRETREATMENT PROGRAM BY POTW

The Department has committed to providing technical and legal assistance to the Permittee in fulfilling these joint obligations, in particular assistance with developing an adequate sewer use ordinance, notification procedures, enforcement guidelines, and developing local limits and inspection procedures.

SPILL PLAN

The Department has determined that the Permittee stores a quantity of chemicals that have the potential to cause water pollution if accidentally released. The Department has the authority to require the Permittee to develop best management plans to prevent this accidental release under section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080.

This permit requires the Permittee to develop and implement a plan for preventing the accidental release of pollutants to State waters and for minimizing damages if such a spill occurs.

The Permittee has developed a plan for preventing the accidental release of pollutants to State waters and for minimizing damages if such a spill occurs. This permit requires the Permittee to update this plan and submit it to the Department.

GENERAL CONDITIONS

General Conditions are based directly on State and Federal law and regulations and have been standardized for all individual municipal NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards, Sediment Quality Standards, or Ground Water Standards, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended State or Federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

EXPIRATION DATE: JULY 31, 2007

This permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to protect human health, aquatic life, and the beneficial uses of waters of the State of Washington. The Department proposes that this permit be issued for five (5) years.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.

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1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.

1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

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1991. Wastewater Engineering, Treatment, Disposal, and Reuse. Third Edition.

Tsivoglou, E.C., and J.R. Wallace.

1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

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1976. Chlorination of Wastewater.

Wright, R.M., and A.J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(E2). (Cited in EPA 1985 op.cit.)

APPENDIX A -- PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published on August 16, 2001 in the Yakima Herald Republic to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department published a Public Notice of Draft (PNOD) on March 22, 2002 in the Sunnyside Daily Sun News to inform the public that a draft permit and fact sheet were available for review. A second Public Notice of Draft (PNOD) was published on May 31, 2002 in the Sunnyside Dairy Sun News on the recommendation of the State Attorney General's Office. Interested persons were invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator
Department of Ecology
Central Regional Office
15 West Yakima Avenue, Suite 200
Yakima, Washington 98902

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and the reasons why the hearing is warranted.

The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's permit coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or

deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, 509/575-2490, or by writing to the address listed above.

APPENDIX B -- GLOSSARY

Acute Toxicity--The lethal effect of a pollutant on an organism that occurs within a short period of time, usually 48 to 96 hours.

AKART-- An acronym for "all known, available, and reasonable methods of prevention, control, and treatment".

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation --The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month (except in the case of fecal coliform). The daily discharge is calculated as the average measurement of the pollutant over the day.

Average Weekly Discharge Limitation -- The highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week. The daily discharge is calculated as the average measurement of the pollutant over the day.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD₅--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD₅ is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the Federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a pollutant on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Combined Sewer Overflow (CSO)--The event during which excess combined sewage flow caused by inflow is discharged from a combined sewer, rather than conveyed to the sewage treatment plant because either the capacity of the treatment plant or the combined sewer is exceeded.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing a minimum of four discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring--Uninterrupted, unless otherwise noted in the permit.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Engineering Report--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial User-- A discharger of wastewater to the sanitary sewer which is not sanitary wastewater or is not equivalent to sanitary wastewater in character.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Infiltration and Inflow (I/I)--"Infiltration" means the addition of ground water into a sewer through joints, the sewer pipe material, cracks, and other defects. "Inflow" means the addition of precipitation-caused drainage from roof drains, yard drains, basement drains, street catch basins, etc., into a sewer.

Interference -- A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal and;

Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued there under (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), sludge regulations appearing in 40 CFR Part 507, the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Major Facility--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minor Facility--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone--A volume that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in State regulations (Chapter 173-201A WAC).

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

Pass through -- A discharge which exits the POTW into waters of the State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation), or which is a cause of a violation of State water quality standards.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Potential Significant Industrial User--A potential significant industrial user is defined as an Industrial User which does not meet the criteria for a Significant Industrial User, but which discharges wastewater meeting one or more of the following criteria:

- a. Exceeds 0.5 % of treatment plant design capacity criteria and discharges <25,000 gallons per day or;
- b. Is a member of a group of similar industrial users which, taken together, have the potential to cause pass through or interference at the POTW (e.g. facilities which develop photographic film or paper, and car washes).

The Department may determine that a discharger initially classified as a potential significant industrial user should be managed as a significant industrial user.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Significant Industrial User (SIU)--

- 1) All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N and;
- 2) Any other industrial user that: discharges an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling, and boiler blow-down wastewater); contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority* on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

Upon finding that the industrial user meeting the criteria in paragraph 2, above, has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Control Authority* may at any time, on its own initiative or in response to a petition received from an industrial user or POTW, and in accordance with 40 CFR 403.8(f)(6), determine that such industrial user is not a significant industrial user.

*The term "Control Authority" refers to the Washington State Department of Ecology in the case of non-delegated POTWs or to the POTW in the case of delegated POTWs.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, wetlands, and all other surface waters and watercourses within the jurisdiction of the State of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids are the particulate materials in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration or mass of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C -- RESPONSE TO COMMENTS

Due to a problem that occurred as part of the Public Review process, the Department conducted two Public Reviews of the draft permit. The only comments received by the Department by the end of the second comment period (July 1, 2002) were from the City of Sunnyside.

During the first Public Review period, the Department received the following comments from the City, in a letter received April 19, 2002. The City's comments are italicized and the Department's responses are in plain text.

Comment 1. Permit Condition G3: Permit Actions

Ecology incorporated the language from WAC 173-220-150(d)(iii) into the draft permit as condition G3, but the regulation's language is not incorporated verbatim. The language in the proposed condition is more stringent than Ecology's regulations, and eliminates an important enforcement option expressly provided in Ecology's regulation. If the Department were to propose the type of change to the regulation that has crept into this condition, the Department would go through a formal rulemaking process.

*The regulatory language in WAC 173-220-150(d)(iii) [sic, actually (iv)] provides that a permit may only be **modified** or **revoked** for "a determination that the permitted activity endangers human health or the environment, or contributes to water quality standards violations[.]" The language in Condition G3.A provides that "the following are causes for **terminating** this during its term, or for **denying** a permit renewal application." Both actions result in the Department terminating a permit. Thus, the permit as written is more stringent than what is stated in Ecology's regulations.*

The City requests the Department either eliminate the condition as unnecessary duplication of regulatory authority or incorporate the regulatory language more fully; it should not eliminate the important enforcement option to modify a permit. The City requests the Department revise this language so that Condition G3.A is revised as follows:

A. *The following are causes for ~~terminating~~ modifying or revoking this permit during its term: ~~or for denying a permit renewal application.~~"*

Response:

The language of this General Condition is taken directly from 40 CFR 122.64. The Department requires that all general conditions remain the same for all NPDES permittees. Therefore, no change will be made to Condition G3.

Comment 2. Date to Submit Final Facility Plan (S8.B & Summary of Permit Submittals)

EXPIRATION DATE: JULY 31, 2007

(Comment paraphrased) The City had submitted a draft Facility Plan to the Department for review in March 2002. The Department had not commented on the draft Facility Plan at the time this draft permit was in its first Public Review period.

This comment to the draft permit requested that the required submittal date for the final Facility Plan be modified (in bold) as follows:

*By October 15, 2002, **or sixty (60) days after the City receives comments from the Department, whichever is later**, the Permittee shall submit to the Department, for review and approval, a final Facility Plan.*

The City was concerned that the Department's review of the draft Facility Plan would be delayed, not allowing the City sufficient time to respond to the Department's comments, and further exposing the City to third party lawsuits.

Response:

The Department has since reviewed the draft Facility Plan and issued a comment letter in April 2002; therefore, this comment has been resolved.

During the second Public Review period, the City submitted the following comments in a letter received by the Department on June 18, 2002.

Comment 1: Condition S8.B and Summary of Report Submittals

[Paraphrased] Due to the magnitude and breadth of the Department's comments on the City's draft Facility Plan, contained in a letter April 19, 2002, the City requests the submittal date for the final Facility Plan be revised from October 15, 2002 to April 15, 2003.

Response:

The Department grants this request and the submittal date in the permit has been changed accordingly.

Comment 2: Effective Date of the City's New NPDES Permit

The City requests the Department establish the permit's effective date immediately after the close of the second public comment period. Initially, the City requested the Department establish an effective permit date of June 1, 2002. As the City is working towards its compliance benchmarks, despite the delay caused by reopening of the comment, it does not request any additional time to meet the requirements of its new permit.

The Department cannot establish a permit effective date in the middle of a calendar month; therefore, the earliest possible effective date of this permit is August 1, 2002.

Permit Writer's Note: During the first Public Review period an omission and an error were found in the draft permit. The Department determined that, due to questions about the removal of nitrogen by the treatment plant, monitoring of influent TKN is required. In addition, the reviewer determined that monitoring of effluent ammonia by grab sample was inappropriate. The final version of this permit, as issued, has been revised to include influent monitoring of TKN and effluent monitoring of ammonia utilizing 24-hour composite sampling.